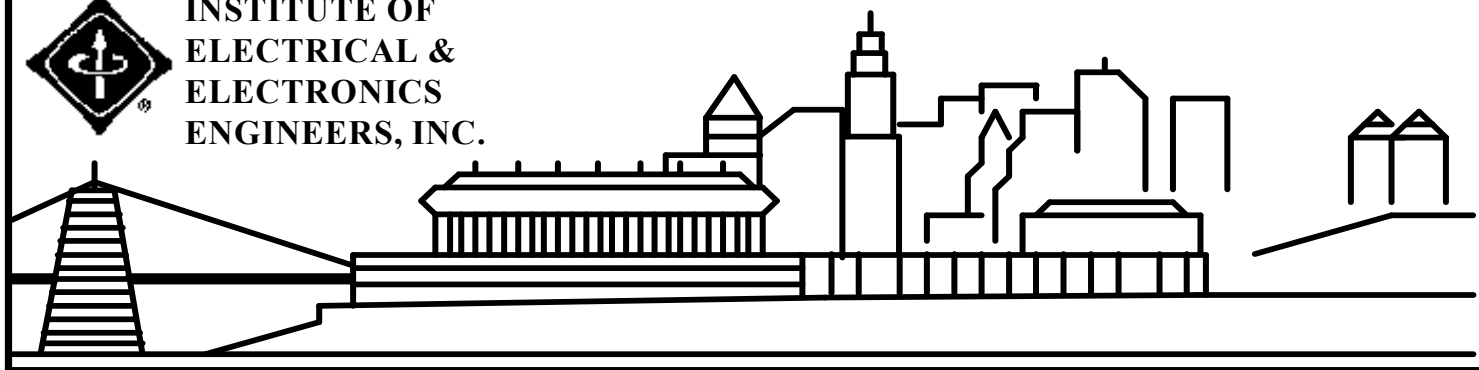




INSTITUTE OF
ELECTRICAL &
ELECTRONICS
ENGINEERS, INC.



SEPTEMBER 1999

IEEE CINCINNATI SECTION NEWSLETTER

SEPTEMBER MEETING

Tour of FANUC Robotics

ABOUT THE TOUR:

The tour will be conducted by Charles "Chuck" Dill of Fanuc Robotics North America (FRNA). FANUC Robotics North America, Inc., a wholly owned subsidiary of FANUC Ltd., the world's foremost robot manufacturer, is an automation intelligence company dedicated to improving customer productivity through total automation solutions.

With more than 15 years of noted accomplishments, experience and expertise, FANUC Robotics is the leader in automated systems solutions. FRNA solutions cover assembly, painting, palletizing, packing, welding, dispensing, cutting, laser processing, material handling and other emerging applications.

DATE : September 23, 1999

PLACE : FANUC Robotics - See directions and map below.

TIME : 7:00 p.m. - Video Presentations on Robotics Applications, Products and Systems

7:30 p.m. - Tour of FRNA Facility

- review of robot systems on manufacturing floor

- demo on vision system for robot guidance

- demo on CAD Solid Works for robot work-cell evaluation

8:30 p.m. - Adjournment (approximate)

THE CINCINNATI SECTION NOW HAS ITS OWN VOICE MAILBOX for making reservations for meetings or for providing comments or suggestions to **YOUR** Executive Committee.

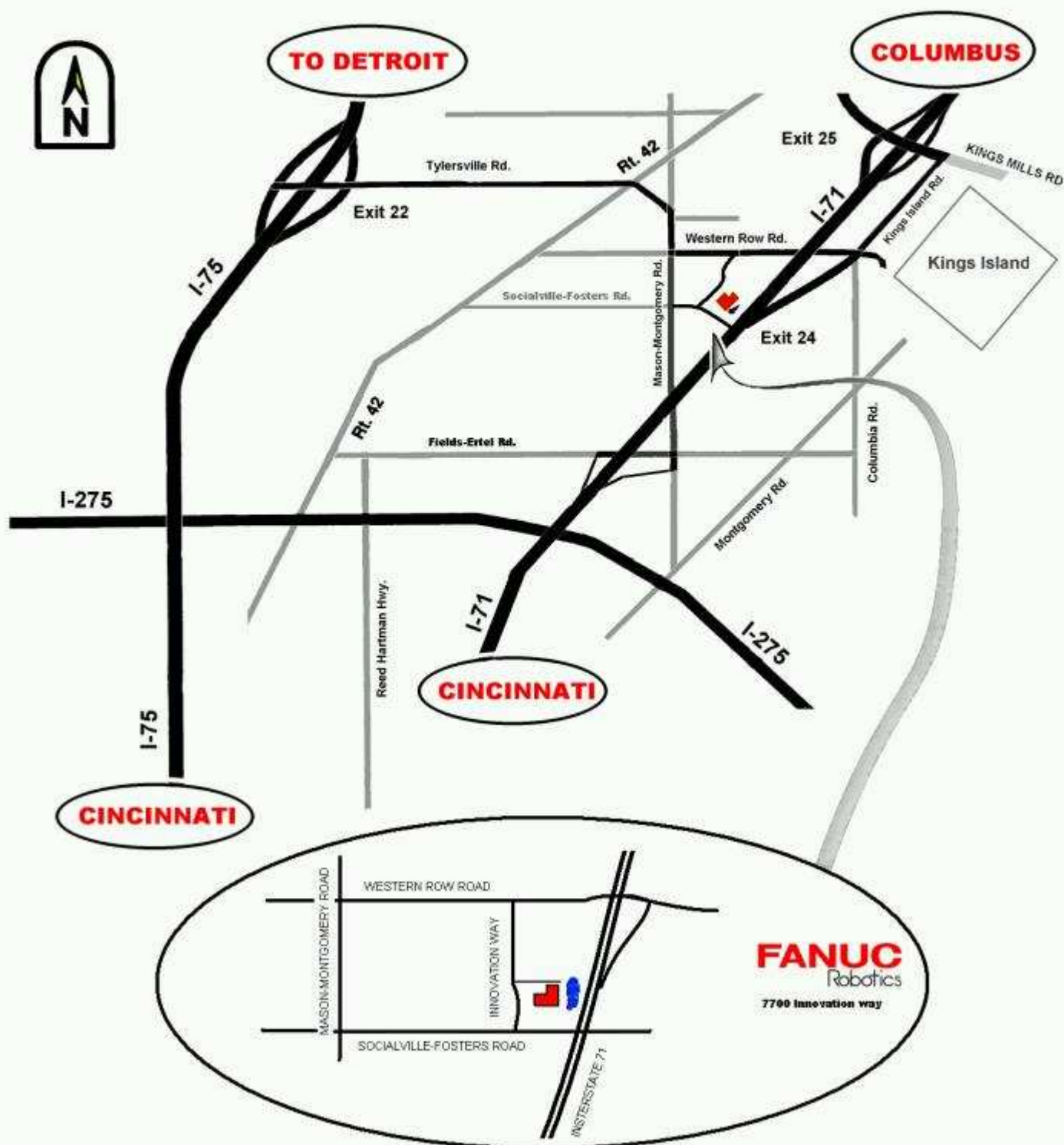
Please call the Cincinnati Section Voice Mailbox at 629-9380, by **Noon, Tuesday, September 21, 1999** if you plan to attend. Please leave your **Name** and **IEEE Member Number**.

DIRECTIONS: FANUC Robotics North America, Inc. is located in Mason, Ohio at 7700 Innovation Way. Take I-71 North to the Western Row Road. Turn left at the traffic light at Western Row Road. Proceed west and turn left on Innovation Way. FANUC's phone number is (513) 754-2400.

FANUC Robotics

FANUC Robotics North America, Inc.
7700 Innovation Way
Mason, Ohio 45040

Telephone : (513) 754-2400
fax: (513) 754-2440



CHAIR'S MESSAGE

by Ron Harbaugh, Section Chair

Summer is winding down and the IEEE year is winding up as we plan for the coming months. We have some interesting meetings coming up this year. Your Executive Committee has been busy with planning for Section activities and other IEEE business activities.

The Cincinnati Section sponsored Allison Santoro at the Dallas GOLD Conference September 3-6, 1999 in Dallas, Texas. Graduates of the Last Decade (GOLD) program is part of the IEEE Pace initiative to keep recent graduates in contact with IEEE.

We continue to support our Pace program with activities in the local schools. During August, we offered our Section's support with organization of a pre-engineering magnet school in the Cincinnati School District. The proposal went before the Cincinnati School Board on August 23, 1999. In addition, your Executive Board agreed to support Student Professional Activities Committees (SPAC) at the local Universities.

Our Pace committee is considering a Senior Member workshop to be conducted in October. This will be an opportunity for IEEE members to upgrade to Senior Member status.

Bruce Griffing, President Electron Devices Society (EDS), sent the Cincinnati Section a letter of inquiry as to the feasibility of establishing an EDS chapter within Cincinnati Section. There are a significant number of members in our Section who are members of EDS and technically related societies which can establish a new chapter. Member statistics indicate we have as many as 100 members with technical interests to form this chapter. Technical related societies with interest in this chapter are Electron Devices, Reliability, Circuits and Systems, Solid State Circuits, Antennas and Propagation, Microwave Theory and Techniques, Lasers and Electro-optics, and Components, Packaging & Manufacturing. EDS will help the chapter by offering assistance in organizing, providing financial support, help supply lecturers for meetings, and offer a videotape lending library. This is an excellent opportunity to form an interesting technical chapter in the Cincinnati area. Please contact me at 513-352-2941, or Ron.harbaugh@cinpd.rcc.org, and I will help coordinate organization of the chapter.

Mark your calendar for the Dielectrics and Electrical (DEI) Society conference to be held at the Cincinnati Convention Center, October 25 - 28, 1999. The IEEE Dielectrics and Electrical Insulation Society will cosponsor the conference entitled "1999 Electrical/Electronics Insulation Conference (EEIC)" (Meeting #6501). For further information, please contact, Conference Services Dept., at IEEE Operations Center at (732) 562-3878. We will get and publish a local contact as soon as it is available. You may also get information from the web site, www.ieee.org.

Our next Executive Committee meeting is scheduled for the evening of October 28 at James Tavern in Blue Ash. If you have any information for the Executive Board that you wish to present, or if you wish to attend, please contact me.

See you at FANUC on September, 23rd, our next Section meeting.

UPCOMING SECTION MEETINGS AND TOPICS

October 21, 1999 - Section Meeting; Topic will be "Convergence of PCS, Wireless and Wireline Communications"

October 28, 1999 - Executive Committee Meeting
At James Tavern, 5:30 p.m.

December 2, 1999 - Section Meeting; Topic will be "Web Tools "
January 27, 2000 - Section Meeting; Topic will be " Appliance Applications – LINUX "
February 24, 2000 - Section Meeting (ESC Banquet)
March 23, 2000 - Section Meeting; Topic will be "Doppler Radar "
April, 2000 - Section Meeting; Topic will be "PACE "
May, 2000 - Section Meeting; Topic is undecided at this time.

Detailed information about the Section Meetings will be included in that month's newsletter. If you are interested in attending an Executive Committee Meeting, please contact either Ron Harbaugh or Jack Beckmeyer (see last page for phone numbers).

NEW MEMBERS

The following individuals are IEEE members who are new to our Section:

SRINIVASAN ARASHANIPALAI
SHANKAR BALACHANDRAN
ALAN L. BUTERBAUGH
JAMES J. CAFFERY
EDWARD DOUGALA
PAMELA D. DUNHAM
TOM E. EICHENBERGER
MICHAEL GOLDWEBER
MARK C. GUTTMAN
JANICE W. JENKINS
ANDREW D. JOHNSON
DILIP KAMATH
VISHWASHANTH R. KASULASRINIVAS
KENDAL W. KERR

RAVINDRA R. KURAMKOTE
RAJESH LOHANI
DAVID A. NOVITSKI
DALE R. PETERSON
S SAMUEL J. PRABUKUMAR
TIMOTHY H. ROEKEL
KENNETH D. ROTH
WILLIAM T. SALYERS
JOSEPH L. SECCIA
MICHAEL J. SLATTERY
WEIYA SONG
SHRINATH KUTTY THELAPURATH
RONALD E. WILLIGER
MATTHEW B. YOUNCE

We wish to extend our welcome to all of our Section's new members!!!

Senior Membership Application Workshop

By Jim Everly, Vice-Chairman & PACE Representative

The Cincinnati Section of IEEE will sponsor a senior membership application workshop on Saturday, October 23, 1999. A volunteer group of Cincinnati Section IEEE Senior Members and IEEE Fellows will be available to assist section members with application forms and references. Section members interested in elevating their current member status to Senior Member grade should consider attend the workshop. Arrangements for the workshop are being finalized by our Arrangements Chairman and will appear in the October newsletter. In the interim if you have questions concerning the workshop please feel free to contact Jim Everly, Workshop Chairman, at j.everly@ieee.org.

The senior member grade is the highest IEEE membership grade that can be obtained by application. Often-cited reasons for applying include recognition of accomplishments by peers, professional advancement and personal satisfaction. Many section members qualify for advancement to the senior member grade much earlier than they realize.

In most sections, members are slow to apply because they are not aware of the requirements. It's worth noting that holding the senior member grade in IEEE does not imply being at the age level of a "senior citizen." Mid-career or earlier is an appropriate time for a member to apply for an upgrade.

Members who have as few as 10 total years of professional experience, with five or more of those years as significant performance, can meet the minimum requirements for the senior member grade. Applications are reviewed by panels of the Admission and Advancement Committee in regional meetings held 10 times each year.

The 10-year minimum requirement for professional experience can include three years for an applicable bachelor's degree, one year for a master's, and another one for a Ph.D. The panels look closely at the documentation on the five years of significant experience. It is suggested that applicants attach a résumé to aid the panel. Asking for more than the required three senior members or fellows to complete the confidential reference form is also a good idea, since the application can be considered as soon as the first three are received.

For more information on IEEE senior member grade or to receive a senior member application kit, send an e-mail request to "application-request@ieee.org" or contact the IEEE by phone at 800-678-4333.

Architects of the Net of Nets - Part 2

by Dick Reiman, Historian

Bob Kahn and Vint Cerf were working independently on the Pentagon's ARPA research project to develop a "packet switching" network, which would decentralize communications. Vint Cerf worked to develop a protocol so that four different sites or nodes of a network, each with a different computer host, could be interconnected or netted together.

Meanwhile, Bob Kahn was working feverishly to meet the deadline of September 1st, 1969, for the delivery of minicomputers called Interface Message Processors (IMPS). These were to be ready to be connected to dedicated high-speed telephone lines. BBN Corporation of Cambridge, Massachusetts, Bob Kahn's employer, stuck to the schedule and shipped the first IMP to California before the Labor Day deadline. The IMP weighed 450 kg, was the size of a refrigerator, and consumed 2100 watts. Its design was based on a Honeywell 516 minicomputer. It had a 100-us clock and could process 850kb/s. This then became panic time for Vint Cerf's group at UCLA as the developing of a protocol was lagging.

The IMP's had their origin in 1967 at the University of Michigan when ARPA's Larry Roberts decided that burst of data or "packets" would be sent by an IMP over the telephone line, and received by an identical IMP at the receiving end. The IMP would then interface with the host computer at each node of the network. Packet switching programs could be written for a single type of IMP computer, while the host computer, each of different manufactures, would view the IMP as a "black box". The concept of two (later more) steps at each node was called "layering". Host computers varied between a Sigma 7 with SEX operating system, a Scientific Data Systems 940 using Genie, an IBM 360/75 using os/mvt and a Digital EQUIPMENT CORP. PDP-10 with Tenex operating system.

Graduate students at UCLA led by Stephen D. Crocker devised the host interfaces. Their Network Control Protocol would connect host to IMP subnetwork and also to each other. The ARPAnet program was, however, both inflexible and didn't extend to future networks, and BBN was reluctant to share its software with the UCLA group. Enter Cerf, a key designer at UCLA, and Kahn of BBN to work things out.

"Vint and I hit it off professionally", Bob Kahn recalls, "We both liked really bad puns". Kahn traveled to California to assess the system. Said Cerf: "He would ask for software to do something. I would program it over

night, and we would do the tests." Cerf continued: "we would crash the network trying to stress it. It exhibited behavior that Bob Kahn had expected, but other didn't think could happen."

The Arpanet began with 50-kb/s links across copper wire telephone lines. IMPS broke the messages from the hosts into 1000 bits, and to each packet added a standard header comprising the destination address, the source address and error checking. Then the packets were sent out. This plan met the objectives of no central routing control and could adapt to down lines. The Internet, however, was still several developments down the path to success.

IEEE NEWS

TODAY'S ENGINEER UPDATE

Now in its second year, IEEE-USA's quarterly publication designed to spark collaborative business skills, TODAY'S ENGINEER, has entered into separate publishing and marketing agreements effective with the second-quarter issue to be mailed at the end of May. Stratton Publishing & Marketing, Springfield, VA, is providing "turnkey" editorial services; and Marketing General Inc., Alexandria, VA, is launching a subscription development program. For the second consecutive year, the magazine received the Award of Distinction in The Communicator Awards' Industry Magazines Category. The current issue of TODAY'S ENGINEER can be viewed on the Web at <<http://www.todaysengineer.org>>. To subscribe, go to the Web, or telephone 800-678-4333, and ask for product no. PB331.

SOURCES OF INFORMATION ABOUT IEEE-USA PROFESSIONAL ACTIVITIES (PACE)

By Ed Podell

Member, PACE Divisional Activities Committee

Technical skills are not enough to develop an engineering career - social and communications abilities are critical. The following IEEE-USA publications are a must for all IEEE members interested in improving their Nontechnical skills.

Today's Engineer is a first-of-its-kind magazine dedicated helping technical professionals transcend traditional boundaries, think strategically, and develop a business perspective. This quarterly publication focuses on issues related to enhancing and integrating competencies, career development and the image of the profession. To subscribe, call 1-800-678-4333 and ask for product no. PB331, or see the Web site at <<http://www.todaysengineer.org>>. Member annual subscription price is \$12.95.

The Alliance of IEEE Consultant Networks Coordinating Committee (AICNCC) publishes a newsletter for consultants about network activities and consulting in general. It is published three times per year and is also available on the Web at <www.ieeeusa.org/BUSINESS/info.ieeeusa.consultant.newsletter.txt>. To subscribe, contact William Anderson at (202)785-0017, ext. 330, or w.anderson@ieee.org.

Guidelines

The IEEE-USA Professional Guideline Series are informative booklets, each covering a single topic germane to the professional practice of engineering. These booklets and brochures are packed with information to help solve career problems as well as to address local, state, or national issues. PACE leaders and others may request a complimentary set from Bernice Evans at 202-785-0017, ext. 310, or <b.s.evans@ieee.org>.

The following are currently available in the Guideline series: *Six Threats to Your Retirement Income Security*, *Professional Engineering Registration*, *How to Communicate with Members of the Conference*, *Student Professional Awareness Conferences*, and *IEEE-USA Government Fellowships*.

Policy Positions

IEEE-USA Committees prepare position papers on issues that are likely to require Congressional action. Current positions are available through the IEEE-USA office at 202-785-0017,, or on the Web at <www.ieeeusa.org/FORUM/POSITIONS/>.

IEEE-USA also maintains a chronological Policy Log of testimony and policy communications for member review and public awareness. The Policy Log can be accessed directly on the Web at <www.ieeeusa.org/FORUM/POLICY/>. The Log includes links to electronic text for Congressional testimony and other communications. You may also obtain the Policy Log and copies of any listed document by calling Chris Brantley at 202-785-0017, ext. 303, or <c.brantley@IEEE.org>.

Career Services

One publication which members should certainly see is the Career Services brochure, which lists more than a dozen publications, products and services to enhance and advance the careers of technical professionals. Contact
Bernice Evans.

For example, the 1999 IEEE-USA Salary and Fringe Benefit Survey contains detailed information on the salaries and benefits of electrical, electronics, and computer engineers, along with employment data and demographic occupational characteristics. The Survey is particularly useful when looking for and negotiating a new job. Member price is \$74.95; nonmembers \$149.95. Product # UH2981.

The 1999 Salary Benchmarks: A Personal Workbook is an effective way to evaluate compensation and determine salary expectations for prospective positions. Based on the 1999 Survey's data and analysis, the member price is \$14.95; nonmembers \$19.95. Product # UH2982.

Unemployed IEEE-USA members may obtain a free packet of information on IEEE-USA employment assistant services. This packet includes information on a variety of job-search services and a free copy of the Engineer's Guide to Lifelong Employability. Contact William Anderson.

The IEEE-USA Licensure and Registration Committee has created a Speaker's Kit for use by Section and Society Chairs. The kit includes a Power Point presentation on engineering licensing issues. For information contact Marilyn Sumpter at 202-785-0017, ext. 336, or email <m.sumpter@ieee.org>.

The annual National Directory of Electrotechnology and Information Technology Consultants is distributed free. Contact William Anderson.

The Engineer's Guide to Lifelong Employability is a practice resource book on locating and obtaining engineering jobs throughout your career.

To order any item: 1-800-678-4333. Career services inquiries: 202-785-0017. Email: <ieeeusa@ieee.org>. Web: <www.ieeeusa.org>.

IEEE AWARDS \$10,000 SCHOLARSHIP TO CANADIAN STUDENT

AT INTEL SCIENCE FAIR

PISCATAWAY, NJ, May 10, 1999 - The IEEE presented a \$10,000 college scholarship to Michael S. Belshaw of Hamilton, Canada, at the 50th-annual Intel International Science and Engineering Fair (ISEF), which was held from 2-8 May in Philadelphia, PA.

The IEEE judging team chose Michael from among 1,100 other contestants to receive the IEEE Presidents' Scholarship for his "outstanding achievement in creating a project that demonstrates an understanding of electrical engineering, information technology, or other IEEE fields of interest." Serving as judges for the IEEE were Members Don Bramlett of Detroit, MI; Peter Mauzey of Holmdel, NJ; and Barney Adler of Philadelphia, PA.

For his project, "Robotic Revolution," Michael constructed a computer-actuated robotic arm against which human beings can play Tic-Tac-Toe. "I wanted to demonstrate how, with the right computer programming, a robot can interact with its environment," he said. A high-school senior at Saint Mary Catholic Secondary School, Michael plans on studying aeronautical engineering in college.

IEEE was one of 60 associations and universities presenting at the May 6, 1999 awards ceremony. IEEE President Kenneth Laker gave the award to Michael before a crowd of nearly 1,500 people. Other IEEE entities presenting awards were the IEEE Computer Society (six awards ranging from \$100 to \$500) and the IEEE Philadelphia Section (eight awards ranging from \$250 to \$600).

"I am proud to say that this Scholarship is the largest monetary award that is being given by an association at this year's fair," Laker said. "This, along with the other IEEE prizes, demonstrates the IEEE's strong commitment to educational excellence world wide."

The 1999 IEEE Presidents' Scholarship will be funded by President Laker's budget. For the 2000 - 2002 Intel ISEFs, the Scholarship will be funded by the IEEE Foundation.

The world's largest pre-college science competition, the Intel ISEF is often called the "Olympics" of science fairs because of its international reach and scientific breadth. It is the only global science fair representing all life sciences-from biochemistry to zoology-for students in grades nine through twelve. This year's fair drew students from 47 countries, including Brazil, Israel, Russia, South Africa, and Japan. The finalists emerged from a field of approximately one million high-school students who competed in local ISEF-affiliated science fairs in 1998-1999.

Nearly half the participants in this year's fair were young women.

For more information, contact Christy Bouziotis, IEEE Educational Activities, at c.bouziotis@ieee.org.

IEEE-USA SALARY SURVEY SHOWS STRONG INCOME GROWTH OVERALL, PAY IS WAY UP, BUT SOME YOUNGER PROFESSIONALS STILL LAG

WASHINGTON, May 18, 1999 -- Primary incomes of electrical and electronic engineers are up 13.9 percent since 1997, according to the IEEE-USA SALARY AND FRINGE BENEFIT SURVEY, 1999-2000 edition. "This confirms what our members have been telling us all along," IEEE-USA Survey Committee Chair Robert Nash said. "The overall picture is good, reflecting the critical role experienced engineers play in sustaining these good economic times. But there are some groups falling behind."

According to IEEE-USA's definitive biannual survey, the January 1999 median primary income from base salaries, self-employment, commissions and bonuses for IEEE members in the U.S. was \$82,000, a substantial increase from the comparable 1997 figure of \$72,000. This pace exceeds inflation by more than 10 percent, and the gains for the most flexible and entrepreneurial engineers -- the full-time self-employed -- are even better: an average 19.4 percent increase over two years.

"Encouraging as these statistics are, they are partially offset by a continuing lag for those who entered the workforce in the early 1990s," explained Nash. "While recent graduates and the most experienced are doing better than ever, those with two to six years experience are well below where they should be. The salaries which younger individuals make earlier in their career are a key incentive for attracting talented, future-oriented people into professional engineering -- and those incentives are not keeping pace."

"IEEE-USA has continued to refine the Salary Survey to make it even more helpful to mid-career and entry-level engineers who are considering their options," Nash said. "We think they will find the 1999 Survey's details about pay distinctions extremely useful."

The 1999 Survey includes an upgraded regression model for calculating income estimates for thousands of combinations of skills, experience, levels of responsibility, degrees, specialty, type of employer, and other factors, including new details on computer hardware and software and network administration. This model provides the basis for the Salary Survey's upcoming companion volume, SALARY BENCHMARKS: A PERSONAL WORKBOOK, which provides for ranges of pay to allow engineers to consider personal circumstances for their career planning, including the possible effects location will have for 17 major metropolitan areas, as well as other parts of each U.S. region.

THE IEEE-USA SALARY & FRINGE BENEFIT SURVEY, 1999-2000 Edition, can be obtained by calling 1-800-678-IEEE and asking for product no. UH2981. The cost is \$74.95 for members and \$149.95 for nonmembers.

For more information on the survey, see <<http://www.ieeeusa.org/CATALOG/99salary.html>>.

SIX YEAR FEDERAL STUDY FINDS NO CANCER-POWER LINE CONNECTION

In 1992, Congress authorized an Electric and Magnetic Fields Research and Public Information Dissemination Program with a mandate to investigate possible health effects related to electric and magnetic fields from power lines and electrical transmission. On June 15, the National Institute of Environment Health released a final report wrapping up the program and summarizing their findings. Their conclusion:

"Extra low frequency electromagnetic field (ELF-EMF) exposure cannot be recognized as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard. In our opinion, this finding is insufficient to warrant aggressive regulatory concern. However, because virtually everyone in the United States uses electricity and therefore is routinely exposed to ELF-EMF, passive regulatory action is warranted such as a continued emphasis on educating both the public and the regulated community on means aimed at reducing exposures. The NIEHS does not believe that other cancers or non-cancer health outcomes provide sufficient evidence of a risk to currently warrant concern."

NIEHS Director Kenneth Olden added that since research to date "cannot completely discount the epidemiological findings...and because virtually everyone in the United States uses electricity and therefore is routinely exposed to EMF, efforts to encourage reductions in exposure should continue. For example, industry

should continue efforts to alter large transmission lines to reduce their fields and localities should enforce electrical codes to avoid wiring errors that can produce higher fields."

IEEE and Global Resources Collaborate To Offer MBA PowerPak Course To IEEE Members

PISCATAWAY, NJ, June 24, 1999 - The IEEE has collaborated with Global Resources, a global management training and consulting firm, to offer MBA PowerPak to IEEE members at a special discounted price. IEEE members who attend the eight-day, two-part program are eligible to receive 6.3 IEEE Continuing Education Units (CEUs).

MBA PowerPak is designed for technical/scientific managers who are working across and between business functions and organizations; middle and high-performance junior level managers who are interfacing with all management levels; and managers who want to expand their business knowledge and are seeking a useful toolkit of skills and resources. The program offers instruction in the most critical MBA disciplines, including Business Strategy and Planning, Marketing in a Global Economy, Mastering Financial Analysis, and Managing in the New Millennium. Upcoming MBA PowerPak sessions that will honor the special IEEE member rate include:

- Chicago (Lisle, IL): Sept. 21 - 24 and Oct. 26 - 29, 1999 (10% off to IEEE members)
- Somerset, NJ: Oct. 19 - 22 and Nov. 30 - Dec. 3, 1999 (10% off to IEEE members)
- Plus, a special IEEE member-focused session to take place in the Boston area: Nov. 16 - 19 and Dec. 14 - 17, 1999 (15% off to IEEE members)

Many of the nation's leading corporations-including AT&T, Johnson and Johnson, Loral Skynet, and Lucent Technologies-have enrolled their employees in MBA PowerPak. "The program prepares the manager for the innovative business environment and the challenges and technologies of the New Millennium," says Global Resources President Di Landau. "Accelerating rates of technological change, new forms of competition, and complex social forces are just some of the business issues that Global Resources and the IEEE foresee in the landscape of business in the twenty-first century."

Designed in partnership with Northeastern University's College of Business Administration, MBA PowerPak's content structure is modeled from the course curriculums of the top MBA programs in the U.S., including Northeastern's, Harvard's, Stanford's, and Wharton's. All MBA PowerPak instructors have advanced degrees in addition to their minimum fifteen years of high-technology business and overseas field experience. In the classroom, the instructors blend traditional academic models with case studies and examples.

MBA PowerPak offers:

- The chance to learn core MBA skills without having to enroll in a formal MBA program
- The opportunity to discuss real-world management challenges and obtain experiential input from classroom peers and MBA PowerPak's specialized teaching staff
- Program certification through Northeastern University's College of Business Administration
- 6.3 IEEE Continuing Education Units (CEUs)

To register or obtain additional information regarding the course curriculum, training staff, scheduling, and pricing, managers are encouraged to visit the MBA PowerPak Website at www.MBAPowerPak.com, or to call the MBA PowerPak Registration Center at 1-877-GRTRAIN (1-877-478-7246). For more information about the IEEE and how to become a member, contact Christy Bouziotis at c.bouziotis@ieee.org.

HOUSE REPUBLICANS UNVEIL "E-CONTRACT" AGENDA

On June 23, the House Republican Leadership led by Majority Leader Richard Armey (R-Tx) unveiled its "E-Contract" with America, pledging support for a pro-high-tech agenda of legislative and oversight initiatives. Their pledge and agenda follows:

"We hereby pledge to continue our legislative and oversight efforts to remove the barriers to future innovation, competition, and growth. We assert that freedom is the answer, not government intervention. The benefits of the high-tech future can be best delivered to all Americans by:"

- * Pursuing tax cuts that promote investment, research, and development.
- * Modernizing our education system.
- * Ensuring Year 2000 readiness.
- * Preventing frivolous lawsuits that stifle growth.
- * Enhancing America's global market strength.
- * Removing barriers to E-Commerce.
- * Moving government into the Digital Age.
- * Reigning in excessive regulation from federal agencies.
- * Allowing high speed Internet access to flourish.
- * Protecting intellectual property rights.

For more information on the unveiling and related legislation being considered by Congress, see <http://freedom.house.gov/econtract/>

SENATE APPROPRIATORS PROPOSE NEW INTELLECTUAL PROPERTY OFFICE

Noting that more than \$18 billion is lost each year due to infringement of intellectual property rights, Senate Appropriators added language to the Treasury and General Government Appropriations Bill (H.R. 1282) directing the Director of the President's Office of Management and Budget to submit a plan to Congress for establishment of an inter-agency National Intellectual Property Coordination Center not later than February 15, 2000. The center would coordinate efforts by the Customs Service, Treasury Department and National Security Council to prevent illegal copying and sale of U.S. software, films, digital music, fashions and other products. Authorization was given to expend funds appropriated to the Executive Office of the President to establish the center. Alternatively, the Administration was directed to provide reasons why such a center was not necessary as part of the OMB report.

The provision was attached to the Treasury bill by Appropriations Committee chair Ted Stevens (R-AL) in response to requests by Microsoft CEO Bill Gates, Jack Valenti, head of the Motion Picture Association of America, and other industry leaders that Congress tackle the infringement issue. The Appropriations bill was reported on June 24 and waits full Senate approval.

WHITE HOUSE-CONGRESS COMPROMISE ON Y2K BILL

Behind the scenes negotiations between White House officials and congressional conferees on the Y2K Act (H.R. 96) resulted in key compromises on consumer protections that ensured White House support. The compromise bill was then approved by the Senate (81-18) and the House of Representatives (404-24) on July 1, clearing the way for forthcoming Presidential signature. The final bill:

- * Requires 30-days notice of intention to sue with a description of the Y2K problem. If the defendant responds with a plan to remediate, then an additional 60 days is allowed to resolve the problem. If the defendant does not agree to fix the problem, the plaintiff can sue on the 31st day.
- * Limits punitive damages to \$250,000 or three times compensatory damages, whichever is less, for small businesses with fewer than 50 employees and for individuals with a net worth of up to \$500,000.
- * Provides for proportional liability in non-contract cases (except for cases involving judgment-proof or bankrupt defendants):
- * Does not interfere with Y2K terms and conditions in contracts.
- * Confirms existing law that plaintiffs have to limit damages, and can't collect damages that could have been avoided.
- * Limits Y-2K related federal class actions lawsuits to cases involving \$10 million in claims or 100 or more plaintiffs.
- * Allows for economic damages independent of contract where the defendants committed an intentional tort.
- * Encourages Alternative Dispute Resolution.
- * Exempts Municipalities and Governmental Entities from punitive damages.
- * Personal Injury and Wrongful Death claims are not covered and not affected by bill.
- * Sunsets the law for Y2K failures occurring after January 1, 2003.

The final conference report and bill summary is available on-line at: <http://www.senate.gov/~commerce/issues/y2k.htm>

WHITE HOUSE IT ADVISORS ENDORSE IT RESEARCH "DOUBLING" BILL

In a June 29 letter to Rep. James Sensenbrenner (R-WI), the President's Information Technology Advisory Committee (PITAC) signalled White House support for the Networking and Information Technology Research and Development Act (H.R. 2086). The bill would nearly double federal information technology (IT) research over the next five years and make the research and development (R&D) tax credit permanent. According to co-chairs Bill Joy and Ken Kennedy, PITAC "enthusiastically supports your draft legislation....We are pleased that this bill closely tracks PITAC's recommendations for increased Federal funding for information technology."

The bill was introduced on June 9 and jointly referred to the House Ways and Means Committee and the Science Committee, which Sensenbrenner chairs. The Science Subcommittee on Technology held a July 1 hearing on H.R. 2086 in which witnesses were invited to answer the following questions related to key provisions of the bill:

- * What impact would a permanently R&D tax credit have on private sector investment in research and development and on overall U.S. economic growth?

- * Has the R&D tax credit's history of short-term extensions stymied private sector investment in research and development?
- * How can internship opportunities for students in the IT fields help to improve the IT workforce?
- * Are encryption technologies readily available in foreign countries and do they compare with those encryption technologies subject to U.S. export restrictions?

For House Science Committee hearing information, visit: http://www.house.gov/science/106_hearing.htm

NRC BEGINS STUDY ON WORKFORCE NEEDS IN INFORMATION TECHNOLOGY

On July 6, the National Research Council's Committee to Study Workforce Needs in Information Technology held its first meeting in response to a Congressional mandate to explore the state of the IT workforce and future needs. The NRC report to Congress is due in October 2000.

According to the NRC, the two part study will examine U.S. high-technology workforce needs over the next ten years, with emphasis on information technology (IT), and establish a common base for national discussions. It will describe the range of industries in which IT workers are employed (in the U.S. or abroad), the types of jobs held, and the skills and education needed. It will profile the current IT workforce, including older workers, describe the market demand for IT workers, and examine the availability of both domestic and non-U.S. workers. The study will also explore the capacity of the U.S. educational system and of employer training programs to produce qualified workers, as well as the feasibility of meeting labor needs from abroad.

In remarks to the Committee, IEEE-USA representative Ron Hira said that the study should attempt to answer at least four fundamental questions:

- * How responsive are IT labor markets to imbalances in supply and demand created by continuing increases in the pace, intensity and pervasiveness of technological change in a knowledge-based global economy?
- * What factors impede the recruitment, retraining and retention of mid-career and older professionals by employers of IT workers?
- * What are the primary obstacles to increased participation by traditionally underrepresented groups (including women, ethnic minorities, the handicapped and economically disadvantaged) in America's IT workforce?
- * What is the appropriate role of government (and other stakeholders) in helping to make IT labor markets function more effectively?

The NRC study was mandated by the same legislation that increased the visa caps on temporary entry of skilled foreign workers under the H-1B visa program in 1998 and is intended to provide guidance to Congress on whether to renew the cap increase when it expires in 2002. Senator Phil Gramm, however, is expected to introduce legislation the week of July 12 that would further increase the H-1B visa caps from 115,000 to 200,000 per year and possibly exclude foreign high tech workers who hold Masters or Ph.D.'s from the cap limitation.

See Hira's IEEE-USA statement at: <http://www.ieeeusa.org/forum/policy/99july06.html>

NIST-SPONSORED STUDY TO EXAMINE STANDARDS AND MEASUREMENT ISSUES RELATED TO ELECTRIC UTILITY DEREGULATION

The National Institute for Standards and Technology (NIST) has commissioned the Research Triangle Institute to study technology trends in the generation, transmission and distribution sectors and assess related measurement and standards needs. The results will be presented at a NIST-sponsored national conference on "New Challenges for Measurements and Standards in a Deregulated Electric Power Industry" which will be held on Dec. 6-8, 1999 in Arlington, Va.

"For the first time in anyone's memory, utility companies will not be controlling vertically integrated systems stretching all the way from the turbine to the end user's meter," explains Robert Hebner, acting director of NIST's Electronics and Electrical Engineering Laboratory. "Different people will be designing, building and controlling different parts of the system." Industry-wide adoption of standard measurement methods will help to assure reliable, high-quality service according to Hebner.

Topics to be addressed at the December conference include competitive metering, bulk power measurement, power quality, distributed generation, and communication and control technologies.

Information on the conference is available online at: www.nist.gov/public_affairs/confpage/991206.htm

CONGRESS URGED TO RAISE CAPS ON IRA CONTRIBUTIONS

In a full page ad in the July 15 edition of Roll Call, the bi-weekly Congressional newspaper, IEEE-USA and other members of the Savings Coalition of America urged Members of Congress to raise the \$2K cap on contributions to Individual Retirement Accounts. The Savings Coalition has adopted the slogan: "Why\$2K? -- Uncap the IRA."

See a copy of the ad at: <http://www.ieeeusa.org/forum/policy/99july15.html>

In related news, voting along party lines, the House passed the Financial Freedom Act of 1999 (H.R. 2488), a massive \$790 billion tax relief bill, on July 22. The bill retains a variety of pension provisions supported by IEEE-USA including an increase in the IRA caps. The White House stands by its veto threat, but has indicated that it is willing to negotiate a comprehensive package that includes tax relief of around \$350 billion if Congress will agree to Medicare and Social Security reforms. The Senate has yet to stake out its position, but action on a Senate version may occur as soon as next week before Congress escapes the Washington heat for its annual August District Work Period.

GLENN COMMISSION TO TACK MATH/SCIENCE TEACHER SHORTAGE

On July 20, Education Secretary Richard W. Riley announced appointments to the new National Commission on Mathematics and Science Teaching for the 21st Century, an advisory body created to recommend ways to improve the recruitment, preparation, retention, and support of math and science teachers. Former Senator and Astronaut John Glenn will chair the 31 member commission, which is charged to report its recommendations to Secretary Riley by the Fall of 2000.

Based on school age population and teacher retirement demographics, experts are projecting a demand for over 2.2 million new teachers in the next ten years, with math and science teachers being in particularly short supply. According to the Department of Education, slightly more than 25% of America's current high school math and science teachers lack a major or a minor in the subject they teach. In high poverty schools, that figure is nearly

50%. Moreover, many teachers do not have regular opportunities to improve their professional practice by upgrading content and teaching skills.

See related press release at: <http://www.ed.gov/PressReleases/07-1999/math.html>

New IEEE Video Prepares Engineers for P.E. Exam

PISCATAWAY, NJ, July 27, 1999 - The IEEE has released P.E. Review: Electronics, a video tutorial that will prepare engineers to take the Electronics portion of the Professional Engineering (PE) Licensing Examination in October, 1999 or April, 2000.

P.E. Review: Electronics focuses on the essential concepts required to analyze and design complex circuits and provides valuable hints on maximizing test scores. State licensing boards use examinations prepared by the National Council of Examiners for Engineering and Surveying (NCEES). Expanding on the sample problems put forth in the NCEES's Principles and Practice of Engineering (PE), this video tutorial covers the following topics:

- * Bipolar junction transistors (BJTs)
- * Field effect transistors (FETs)
- * Switching power supplies
- * Operational amplifiers (Op-Amps)
- * Frequency Response, and much more

Presenters Dr. Martin S. Roden and Dr. Sidney Soclof have utilized their combined 65 years of experience, including courses presented through instructional television networks, to anticipate the types of questions viewers will have. Both Roden and Soclof are professional engineers and university professors.

Run Time: 2 Hrs./15 Mins.; IEEE Order #: HV7044-QVE; List Price: \$199.00; IEEE Member Price: \$125.00

Order from IEEE Customer Service, 445 Hoes Lane, PO Box 1331, Piscataway, NJ 08855-1331, USA; e-mail: customer-service@ieee.org; phone: 1.800.678.4333; Web: <http://www.ieee.org/eab>.

IEEE Invites Members To Review Pre-College Engineers Training Program

PISCATAWAY, NJ, August 3, 1999 - IEEE seeks volunteers to review its new Pre-college Engineers Training (PET) resource web site. This site, once completed, will be a main component of IEEE PET, a program that will train engineers to work with K-12 teachers in an effort to increase the technological literacy of students worldwide.

The PET resource web site is designed to sensitize engineers to educational issues such as curriculum development, classroom dynamics, available learning materials, and local implementation of educational standards. After completing the web-delivered training program, participating engineers will be accessible to the pre-college education community. "By nature of their professions, engineers and teachers really know very little about each other," explains Arthur Winston, vice president of IEEE Educational Activities. "In order to be effective resources to pre-college teachers, engineers must first be trained on various educational issues and skills."

Members who volunteer to review the site will be given the secured web address and asked to share their comments/suggestions for improvement of the PET project. The IEEE will then revise the site as necessary. Following the revision, PET will be pilot tested by members in the Worcester, MA & North Jersey sections. A presentation about PET and a report on the test progress will be delivered at IEEE Sections Congress 1999. In early 2000, PET will be deployed throughout all IEEE Sections, and members will be encouraged to use it as a resource to help them serve the education community.

Those interested in testing the PET training site should contact Christy Bouziotis at c.bouziotis@ieee.org, or call 1.732.562.6526.

IEEE Dielectrics and Electrical Insulation Conference

The IEEE Dielectrics and Electrical Insulation Society will cosponsor the conference entitled "1999 Electrical/Electronics Insulation Conference (EEIC)" (Meeting #6501). This conference will be held October 25 - 28, 1999 in Cincinnati, OH.

For further information, please contact, Mr. John Bullivant, P.O. Box 792, Lewiston, NY 14092, (905) 682-6288, (905) 682-0087 (fax), E-mail: johbull@vaxxine.com or Conference Services Dept., at IEEE Operations Center at (732) 562-3878.

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